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(12) **United States Patent**
Heno

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(54) **CARD CLEANING DEVICE**

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Related U.S. Application Data

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(51) Int. Cl.⁷ **G03G 15/00; A46B 15/00**

(52) U.S. Cl. **399/107; 15/256.51**

(58) Field of Search **399/107, 123, 399/124, 361, 381, 390; 347/171; 400/701; 15/3, 102, 256.51, 256.52**

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(57) **ABSTRACT**

A card cleaning device for use in an image forming machine includes a frame adapted for installation into an appropriately configured image forming machine, a bottom card cleaning roller having a shaft removably coupled to the frame and adapted for cleaning a card being fed at an angle relative to the frame and a top adhesive roller coupled removably to the frame on top of the bottom roller for continuous cleaning of the bottom roller by means of friction during device operation. The cards are being fed one at a time at an angle relative to the frame to save internal printer space by a card feeder mechanism disposed proximate to the card cleaning device with the entering end of each card being slightly bent upon first card contact with a pair of card entry guides or a card entry guide plate coupled to the frame under the bottom roller so as to enable card feeding at an angle and prevent premature wear of the bottom card cleaning roller.

15 Claims, 25 Drawing Sheets

